

Lake County Algae Solutions for Clear Lake



March 25, 2021

NobleBioresourcesInc.com

Bioproducts Market Development

In Collaboration With:

CARBON BASED SOLUTIONS





Carbon Based Solutions is a science based company that develops certified bio-based carbon products and engineered applications for Forestry, Mining and Agriculture restoration.

CBS has the proven ability to convert source verified biomass into value-added biocarbon products. Our pyrolytic thermal manufacturing process is modular and scale-able to support various markets.



Raw Feedstock(s)



Finished Biochar & Biocarbon Products



Pyrolytic Carbon Conversion



Biochar Properties



Nutrients Removed or Adsorbed from Runoff Water Using /CBS Biochar Independent Test Results

Nutrients		Starting mg/L	% Adsorbed
Phosphorus	non-soluble P	27	99.9%
Phosphorus	P	27	99.8%
Phosphate	PO4-P	284	86.6%
Ammonia	N	1.1	89.7%
Nitrate	NO3-N	52	64.3%

Solids Removed from Runoff Water Using CBS Water-Sock Independent Test Results

Solids		Starting mg/L	% Removed
Turbidity	NTU*	68 NTU	99.9%
Phosphorus	Non-soluble P	27	99.9%
Solids	SS	506	80.2%

Water holding capacity = 5.6 x the weight of biochar

Biochar Properties

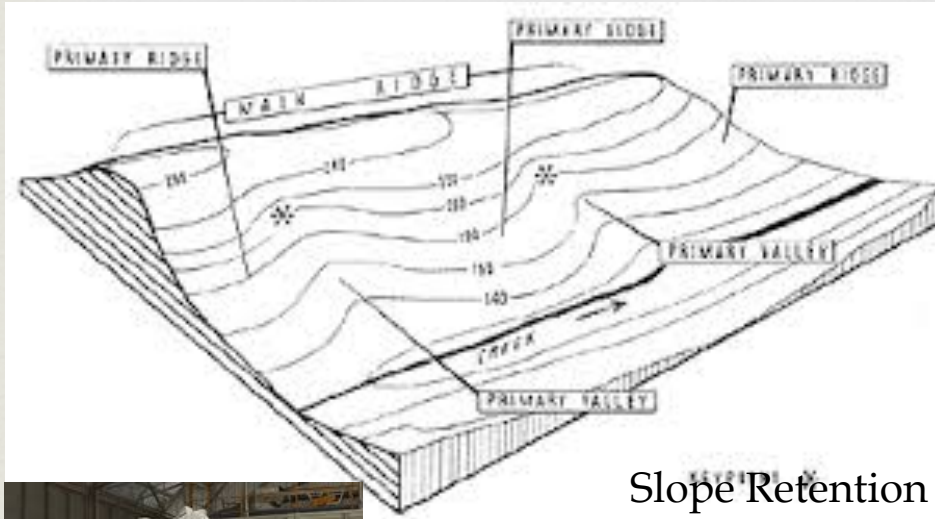


Metals and Other Materials Removed from Runoff Water Solutions Using CBS Biofilter Media Independent Test Results			
Metals		Starting mg/L	% Removed
Aluminum	Al	638	100%
Arsenic	As	203	100%
Barium	Ba	0.17	66.0%
Beryllium	Be	0.16	99.0%
Cadmium	Cd	0.015	100%
Chromium	Cr	166	100%
Cobalt	Co	219	100%
Copper	Cu	1.0	99.7%
Iron	Fe	66	99.6%
Lead	Pb	45	100%
Lithium	Li	0.17	39.0%
Magnesium	Mg	3	69.2%
Molybdenum	Mo	96	100%
Nickel	Ni	211	100%
Selenium	Se	215	100%
Tin	Sn	0.17	100%
Vanadium	V	0.15	75.0%
Zinc	Zn	75	99.7%

Confidential

Carbon Based Solutions

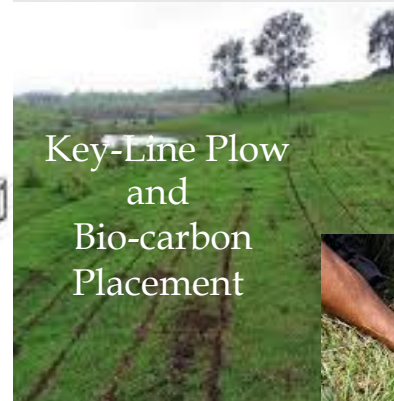
Watershed Applications



CBS Bulk Bag



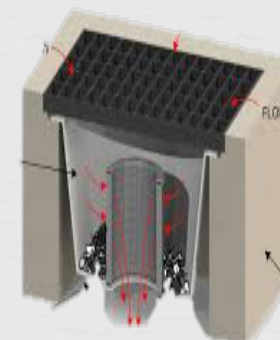
CBS Sock-Filter



Key-Line Flow
and
Bio-carbon
Placement

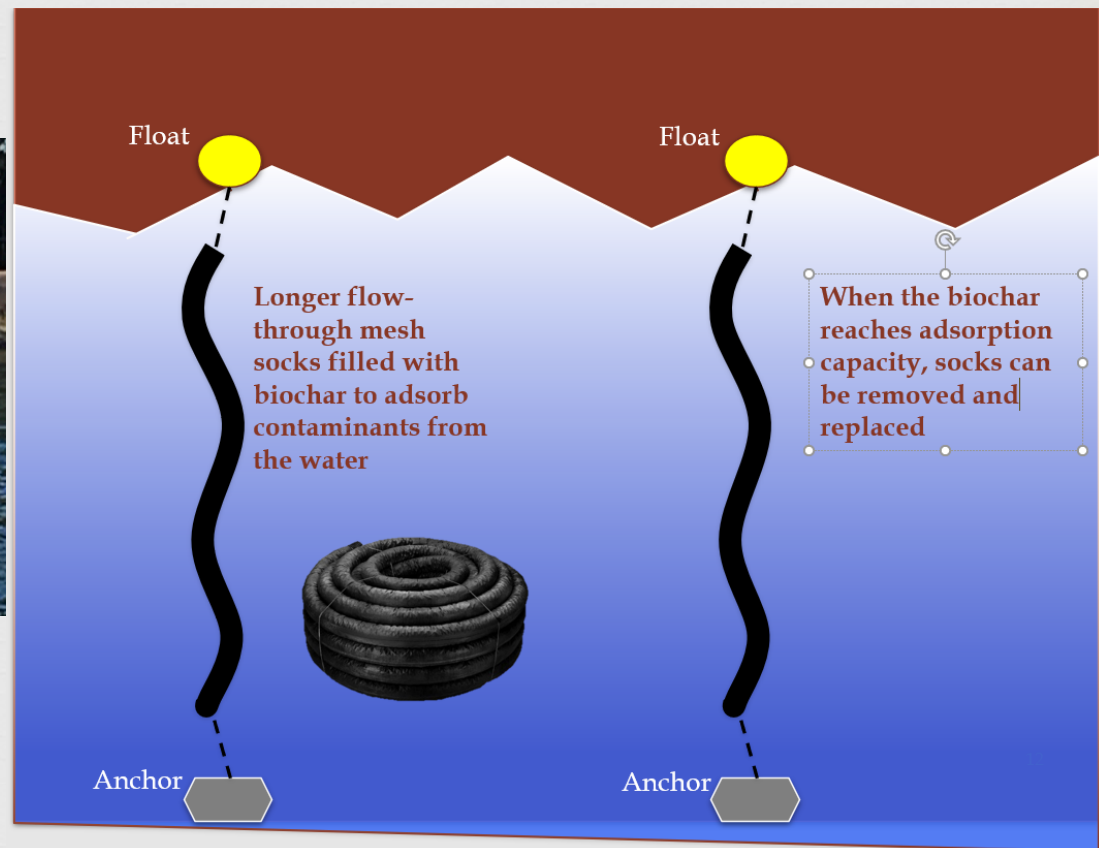


CBS
Bio-carbon



CBS Storm-water
Systems

Placing Filter socks in Water Body with Floats



Stops Algae Blooms

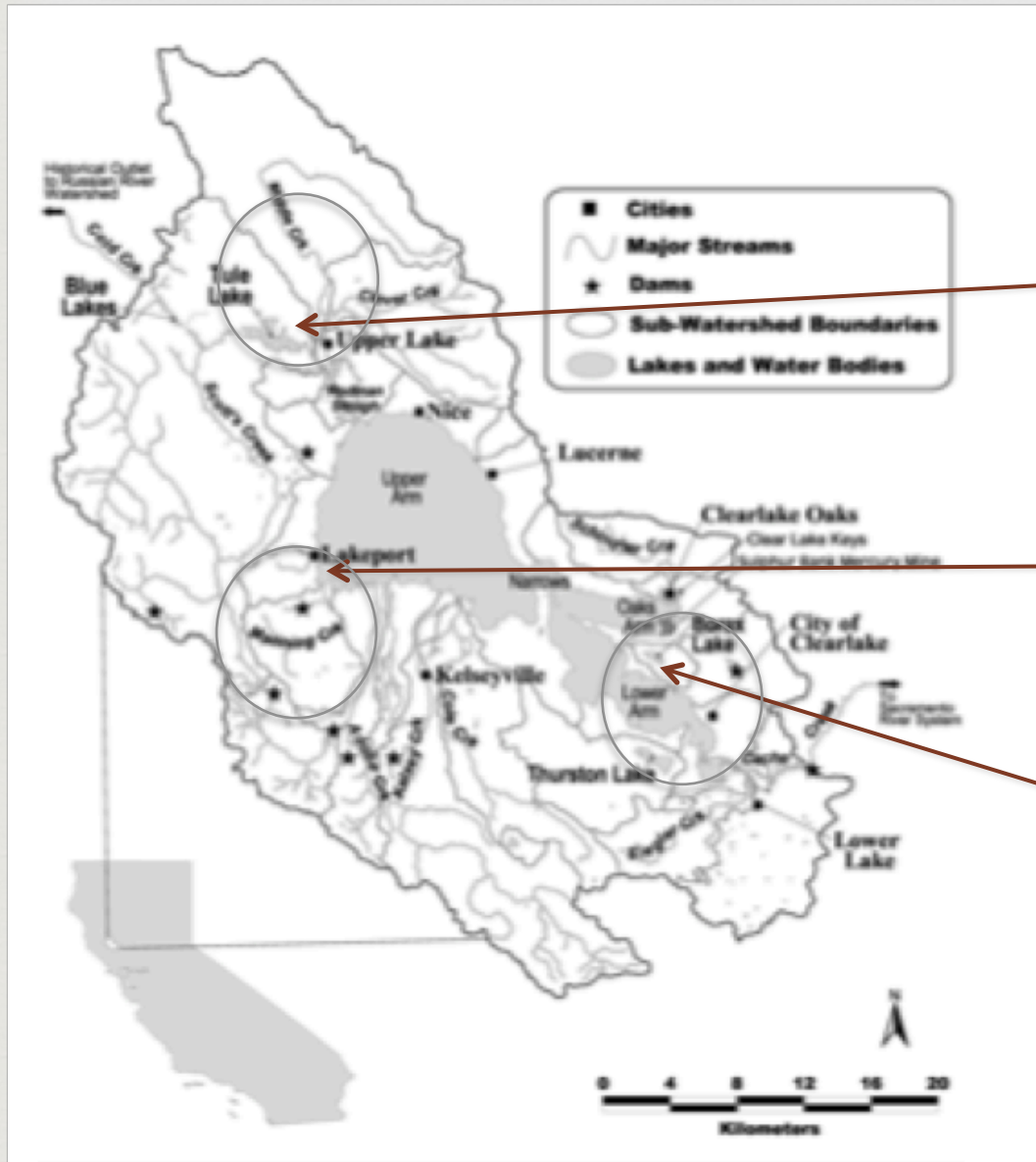


Before



After

Carbon Based Solutions



Up-Stream

Mid-Stream

In-Lake

OMRI certified
USDA Bio-preferred

Carbon Based Solutions



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